

Annual Competitiveness Analysis on **34 Greater China Economies and FDI Development in Greater Bay Area**

Zhang Xuyao

Zhou Jingwei

Li Jingwei

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About ACI

The Asia Competitiveness Institute (ACI) was established in August 2006 as a Research Centre at the Lee Kuan Yew School of Public Policy (LKYSPP), National University of Singapore (NUS). It aims to build the intellectual leadership and network for understanding and developing competitiveness in the Asia region. ACI seeks to contribute to the enhancement of inclusive growth, living standards, and institutional governance through competitiveness research on sub-national economies in Asia. It identifies mitigating issues and challenges for potential public policy interventions through close collaboration with regional governments, business corporations, policy think-tanks, and academics. ACI's three key research pillars include (I) Sub-national economies level competitiveness analysis; (II) The development of digital economy and its implications in 16 Asia economies; and (III) Singapore's long-term growth strategies and public policy analysis.

ACI's value propositions may be encapsulated in its acronym:

Analytical inputs to initiate policies for policy-makers and business leaders in Asia

Capacity building to enable others through improvement in productivity and efficiency

Intellectual leadership to create pragmatic models of competitiveness and inclusive growth

Vision and Mission

- ACI's over-arching vision is to build up its research credibility with policy impact, contributing as a professional, world-class think-tank.
- ACI's mission is to establish our niche as a leading policy think-tank by identifying development trends, opportunities, and challenges among Asian economies and business corporations.
- ACI endeavours to articulate sound recommendations, promote discussion, and shape research agenda in the arena of public policy amongst Asian governments.
- ACI undertakes evidence-based analysis of public policy issues and decisions, in order to provide assessment of their effectiveness as well as economic and societal impact.

Preface

This book is the ninth edition of the Greater China competitiveness research series conducted by the Asia Competitiveness Institute (ACI) at the Lee Kuan Yew School of Public Policy (LKYSPP), National University of Singapore (NUS). As one of ACI's flagship projects, the study adopts a comprehensive framework to measure competitiveness and account for considerable sub-national disparities within Greater China.

ACI's approach differs from major international competitiveness indices in at least four ways. First, it focuses on sub-national competitiveness. Second, it deploys an objective weighting method, namely the Shapley weight method, to compute the index. Third, it provides policy recommendations based on a What-if simulation study. Fourth, it holistically defines competitiveness with a consistent set of indicators, allowing a snapshot view of current conditions and a cross-time comparison for economies.

The past year, 2021, was a year for global recovery. As most major economies achieved high vaccination rates, they adopted the "living with COVID" strategy and gradually opened up their economies. On the other hand, with an 85% vaccination rate, China implemented a "dynamic zero-COVID" policy, aiming to curb the spread of the virus in specific areas while allowing others to operate normally. Such a policy did not slow the development speed in China; instead, it led to 8.1

In addition, this book zooms into the differential development of the Greater Bay Area (GBA) in China. The policy chapter discusses the foreign direct investment (FDI) inflow to GBA cities. Although the total number of FDI projects has decreased because of the pandemic, projects in the retail trade sector have seen significant growth. A case study of Foshan city further accounts for the retail sector boom.

The competitiveness analysis is crucial for understanding the sub-national recovery from the pandemic. I am confident that the insights derived in this book will contribute to figuring out the complex dynamics of Greater China economies pertaining to policy-makers in Greater China and worldwide.

Professor Paul Cheung
Director, Asia Competitiveness Institute
Lee Kuan Yew School of Public Policy
National University of Singapore

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Executive Summary

The second year into COVID-19 has witnessed the continued disruption of the global supply chain. Despite the challenges from international uncertainties, China has continued to support globalisation through statements and actions and further opened up its economies. In 2021, China's total trade volume and realised foreign direct investment (FDI) reached RMB 39.1 trillion and RMB 1.15 trillion, respectively. In addition, China ratified the Regional Comprehensive Economic Partnership (RCEP) and formally applied to be a member of the Comprehensive and Progressive Agreement on Trans-Pacific Partnership (CPTPP).

This ninth edition of the Annual Greater China Competitiveness report presents the latest competitiveness rankings of the 34 economies and five regions of China. In addition, it zooms into the differential development in the Greater Bay Area (GBA). We find that Guangdong and Jiangsu have been the most competitive economies since 2011. The case of Jiangsu has demonstrated the importance of balanced development. It ranks among the top six in all the sub-environments except Standard of Living, Education and Social Stability, because of its large population.

Tibet, on the other hand, has remained at the bottom position since 2000. It has four notable weak sub-environments, namely Government Policies and Fiscal Sustainability, Institutions, Governance and Leadership, Financial Deepening and Business Efficiency and Productivity Performance. However, it does not lag too far behind the middle performers. For example, its Labour Market Flexibility, Technological Infrastructure and Standard of Living, Education and Social Stability are close to the median. Through the *What-if* simulation, Tibet's ranking will improve from 34th to 21st, after raising 20 % of the weakest indicators to the national average.

The competitiveness rankings also shows persistent regional disparities. Since 2002, the Eastern Coastal Area has held the top position. North-eastern China has experienced the most significant decline from 3rd place in 2009 to 5th in 2018. It lags behind in Financial Deepening and Business Efficiency, Labour Market Flexibility and Productivity Performance. This highlights the urgency of industrial upgrading in this old industrial base.

Finally, the policy chapter evaluates the impact of the 2017 GBA development plan on FDI inflows to cities in the region. Using project-level FDI data, the study finds that the Node Cities are catching up with the Core Cities in the number of FDI projects. However, larger-sized projects with more capital expenditure and more possibilities for job creation are still attracted to the Core Cities.

On the other hand, the industries that attracted FDI are not entirely in line with the GBA development plan. The region has attracted a large number of projects in the retail sector. A case study on Foshan has revealed the reasons for the boom: 1) urban agglomeration and 2) better physical connectivity.

Acknowledgements

This year's *Annual Competitiveness Analysis on 34 Greater China Economies and FDI Development in the Greater Bay Area* is led by Dr Zhang Xuyao and supported by Zhou Jingwei and Li Jingwei.

In this book, we have updated previous sub-national and regional competitiveness studies with the latest available data. Our comprehensive approach to measuring competitiveness takes into account different factors that collectively shape the ability of a nation or region to achieve substantial and inclusive economic development over a sustained period of time. In addition, we apply a novel approach to assigning weights in the form of Shapley values to test the robustness of the findings. Furthermore, we focus on the differential development between the Core and Node cities in the Greater Bay Area, and account for the retail sector boom in Foshan city.

This book would not have been possible without the support of our research and administrative colleagues. In particular, we would like to extend our sincere thanks to a competent and dedicated administrative team at ACI including Cai Jiao Tracy, Wesley Chan, Nurliyana Binte Yusoff and Dewi Jelina Ayu Binte Johari.

We would also like to show our appreciation for the contributions from ACI Director Professor Paul Cheung and the research staff – Dr Xie Taojun, Dr Dawn Chow, Dr Ammu George, Dr Lucas Shen, Dr Zhang Chi, Cheah Wen Chong, Kevin Chen, Sky Chua Jun Jie, Ge Yixuan, Sumedha Gupta, Doris Liew Wan Yin, Lim Jing Zhi, Ng Wee Yang, Quah Say Jye and Tan Kway Guan.

We place on record our appreciation for the encouragement we have received from Professor Danny Quah (Dean), Professor Khong Yuen Foong (Vice Dean, Research and Development), Kadir Suzaina (Vice Dean, Academic Affairs), Francesco Mancini (Vice Dean, Executive Education) and other colleagues in the Lee Kuan Yew School of Public Policy, NUS.

List of Abbreviations

5G	The Fifth Generation of (Wireless Communications Technologies)
ACI	Asia Competitiveness Institute
ASEAN	Association of Southeast Asian Nations
CNOOC	China National Offshore Oil Corporation
CNY	Chinese New Year
COVID-19	Coronavirus Disease 2019
CPI	Consumer Price Index
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CYDF	China Youth Development Foundation
CYL	Communist Youth League
DDI	Domestic Direct Investment
EDM	Effect Decomposition Matrix
FDI	Foreign Direct Investment
FRAND	Fair Reasonable and Non-Discriminatory
GBA	Guangdong–Hong Kong–Macau Greater Bay Area
GDP	Gross Domestic Product
GRDP	Gross Regional Domestic Product
GRP	Gross Regional Product
ICT	Information and Communications Technology
IP	intellectual property
IMD	Institute for Management Development
LKYSP	Lee Kuan Yew School of Public Policy
NUS	National University of Singapore
PRC	People’s Republic of China
PRD	Pearl River Delta
R&D	Research and Development
RCEP	Regional Comprehensive Economic Partnership
RMB	Renminbi
RSVI	“Ranked” Standardised Value of Indicator
SAR	Special Administrative Regions
SD	Standard Deviation
SVI	Standardised Value of Indicator
TMT	Technology, Media, and Telecom
TEU	Twenty-foot Equivalent Unit
UK	United Kingdom
US	United States
USD	United States Dollar
WHO	World Health Organization
WTO	World Trade Organisation
ZB	Zettabyte

List of Economies

	Name of Economies in English	Name of Economies in Chinese
1	Anhui	安徽
2	Beijing	北京
3	Chongqing	重庆
4	Fujian	福建
5	Gansu	甘肃
6	Guangdong	广东
7	Guangxi	广西
8	Guizhou	贵州
9	Hainan	海南
10	Hebei	河北
11	Heilongjiang	黑龙江
12	Henan	河南
13	Hong Kong	香港
14	Hubei	湖北
15	Hunan	湖南
16	Inner Mongolia	内蒙古
17	Jiangsu	江苏
18	Jiangxi	江西
19	Jilin	吉林
20	Liaoning	辽宁
21	Macau	澳门
22	Ningxia	宁夏
23	Qinghai	青海
24	Shaanxi	陕西
25	Shandong	山东
26	Shanghai	上海
27	Shanxi	山西
28	Sichuan	四川
29	Taiwan	台湾
30	Tianjin	天津
31	Tibet	西藏
32	Xinjiang	新疆
33	Yunnan	云南
34	Zhejiang	浙江

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Chapter 1

Introduction

1.1 China in 2021: Recovery towards New Normal

The year 2021 is a critical year for China. Politically, it is the 100th anniversary of the founding of the Chinese Communist Party and the first year into the 14th Five-Year Plan. Economically, China has realised its first centenary goal of building a moderately prosperous society in all respects. The country has eliminated absolute poverty, lifting 98.99 million rural residents out of poverty and removing 832 impoverished counties and 128,000 villages from the poverty list (Xinhua Net 2021)¹. In 2021, China's gross domestic product reached RMB 114 trillion with an increase of 8.1%. Per capita disposable income increased by 8.1% in real terms. Internationally, China continues the path of globalisation and opens up its economy further. The total volume of trade in goods grew by 21.4%. China was one of the first ten countries to ratify the Regional Comprehensive Economic Partnership (RCEP), which became effective in 1st Jan 2022. China has also formally applied to join the Comprehensive and Progressive Agreement on Trans-Pacific Partnership.

As the only major world economy to register a positive GDP growth in 2020, China continues to explore policies which would lead to a stable recovery and sustainable growth in the second year of the COVID-19 pandemic. Instead of large-scale lockdowns, China has implemented a "dynamic zero" strategy, which stresses prompt and effective control of domestic outbreaks in specific areas while allowing the rest of the country to operate normally. For example, in May 2021, Guangzhou took swift action to curb the city's pandemic after screening all its 18 million residents (Xinhua 2021)². In July and August 2021, Nanjing, a mega-city with a population of more than 9.3 million, experienced three rounds of mass testing to prevent the spread of the virus (Xinhua Net 2021)³. Such a policy on its own will not guarantee successful control of the pandemic. As the most populous country in the world with a population of 1.4 billion, China had also achieved a 85% vaccination rate by 2021 (Xinhua News Agency 2022)⁴. Other movement control policies include the stay put policy during Chinese New Year (CNY), the traditional peak

¹<http://www.xinhuanet.com/politics/2021-02/26/c.1127140669.htm> accessed on 14 Mar 2022

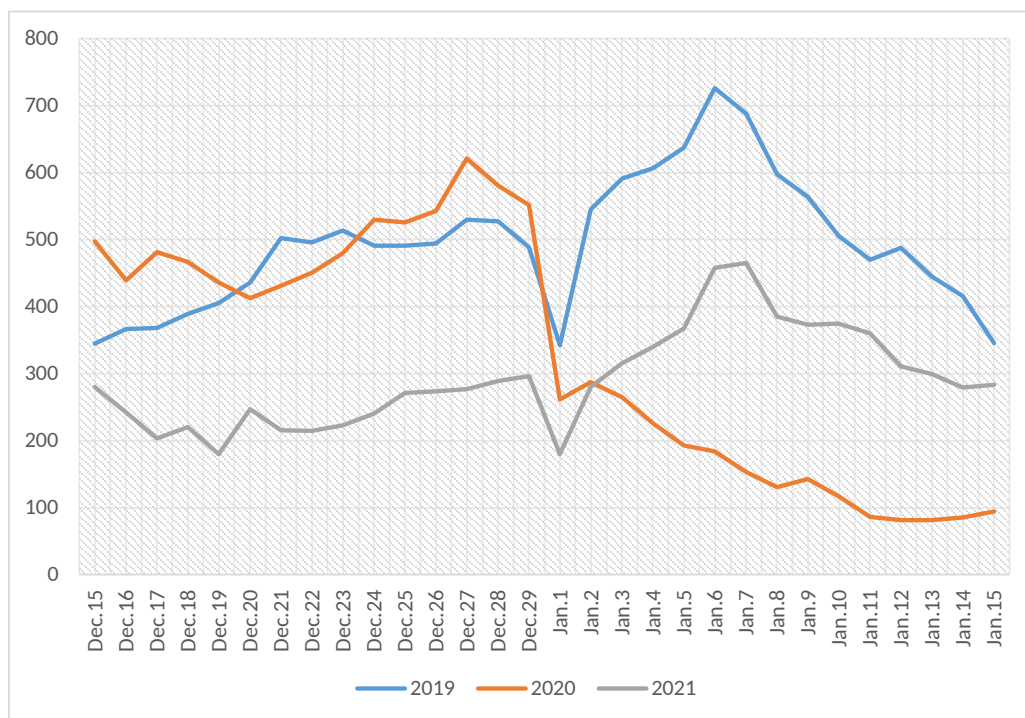
²http://english.www.gov.cn/news/videos/202106/07/content_WS60bd82fac6d0df57f98dacde.html accessed on 14 Mar 2022

³<http://www.js.xinhuanet.com/2021-08/19/c.1127774134.htm> accessed on 14 Mar 2022

⁴http://www.gov.cn/premier/2022-03/05/content_5677248.htm accessed on 14 Mar 2022

travel season. As shown in 1.1, although the Baidu mobility index during the CNY of 2021 is larger than that of 2020, it is equivalent to only around 50% of the index in 2019.

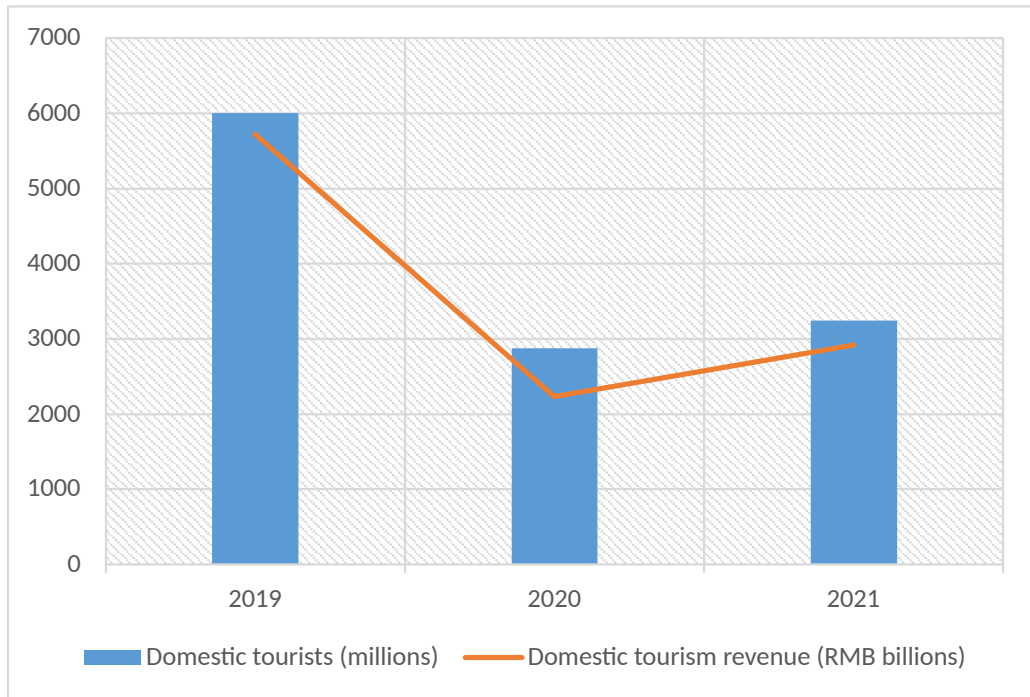
Figure 1.1: Mobility Index during the Spring Festival (Lunar Calendar)



Source: ACI based on information retrieved from Baidu Qianxi

On the one hand, such policies have considerable social and economic costs such as the need for extensive medical resources for mass-testing and business loss caused by large-scale lockdowns. On the other hand, the “dynamic zero-COVID” policy guarantees health and safety and provides a stable and normal work-life environment for people in most regions in China .

Notably, the tourism industry, which requires high mobility of people, is growing in 2021. As shown in 1.2, the total number of domestic tourists reached 3.2 billion, an increase of 367 million or 12.8% over the same period last year. Domestic tourism revenue reached RMB 2.9 trillion, an increase of RMB 690 billion or 31.0% over the same period last year. Even though the numbers are about 50% lower than the values in 2019, it indicates the people’s willingness to travel and reflects the confidence that the pandemic is under control.

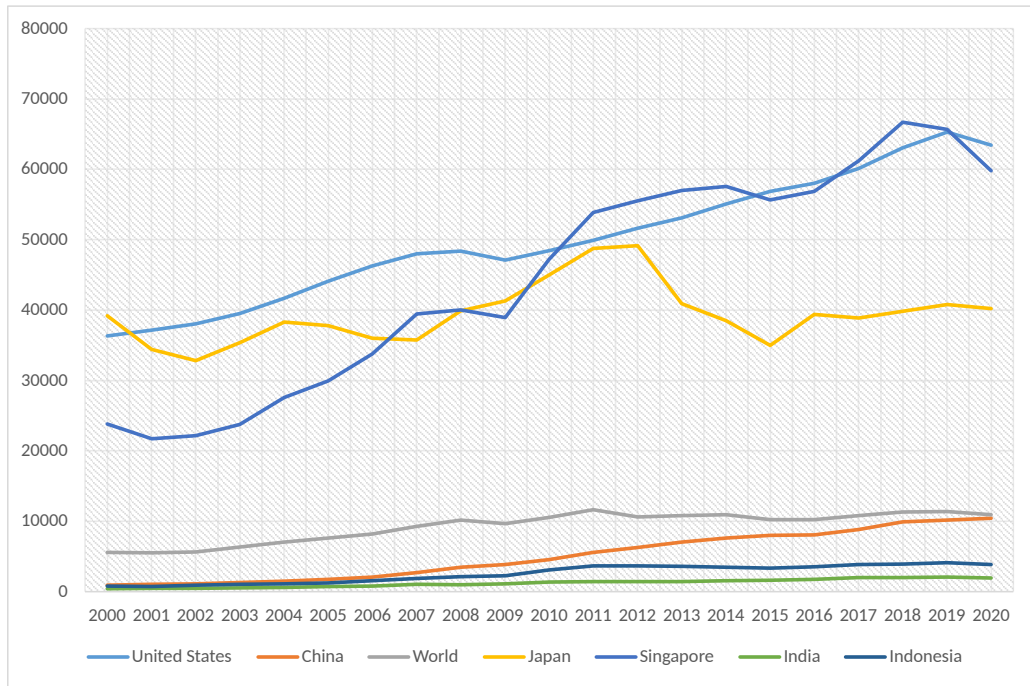
Figure 1.2: Domestic Tourism Industry

Source: ACI based on information retrieved from National Bureau of Statistics of China

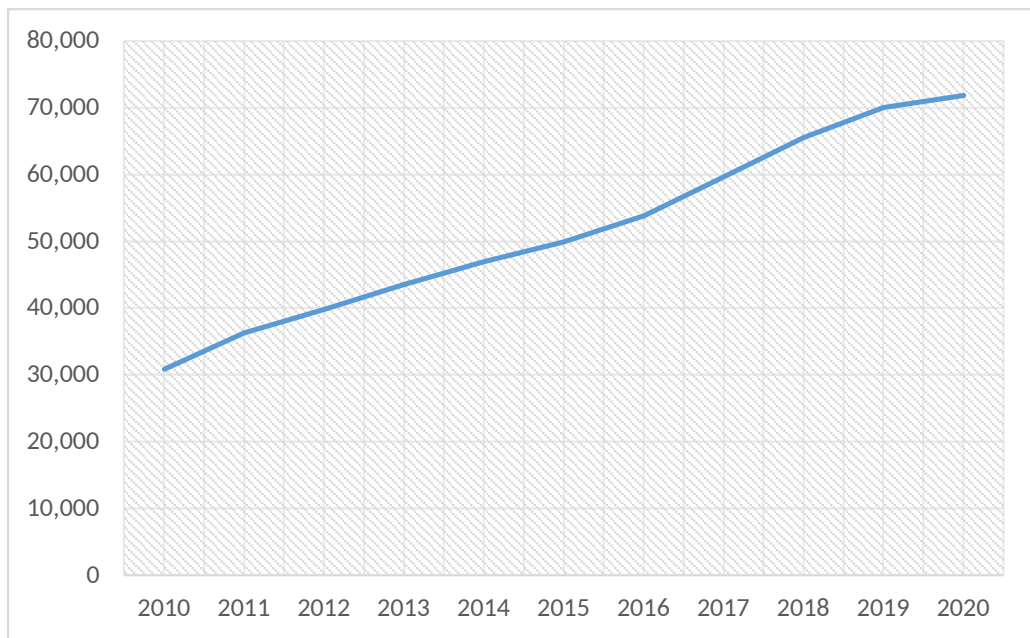
The remaining sections of this chapter will look at the trends and policies in China in 2020, and discuss their impact and implications for China's economy.

1.2 A Macroeconomic Overview of China's Economy

China's economy has achieved a stable recovery in the face of pressure from the weakening global economy. In 2020, China had successfully contained the COVID-19 virus and became the only major country to register a positive economic growth of 2.3%. As shown in Figure 1.3, even though there is still a huge gap between China and the developed countries in terms of GDP per capita, China is taking the lead among developing countries and catching up with the world average. China's GDP per capita has doubled in less than one decade. Although Figure 1.4 shows a flattened trend, China's GDP per capita exceeded RMB 71,000 in 2020.

Figure 1.3: GDP per Capita, China and the other Countries (USD)

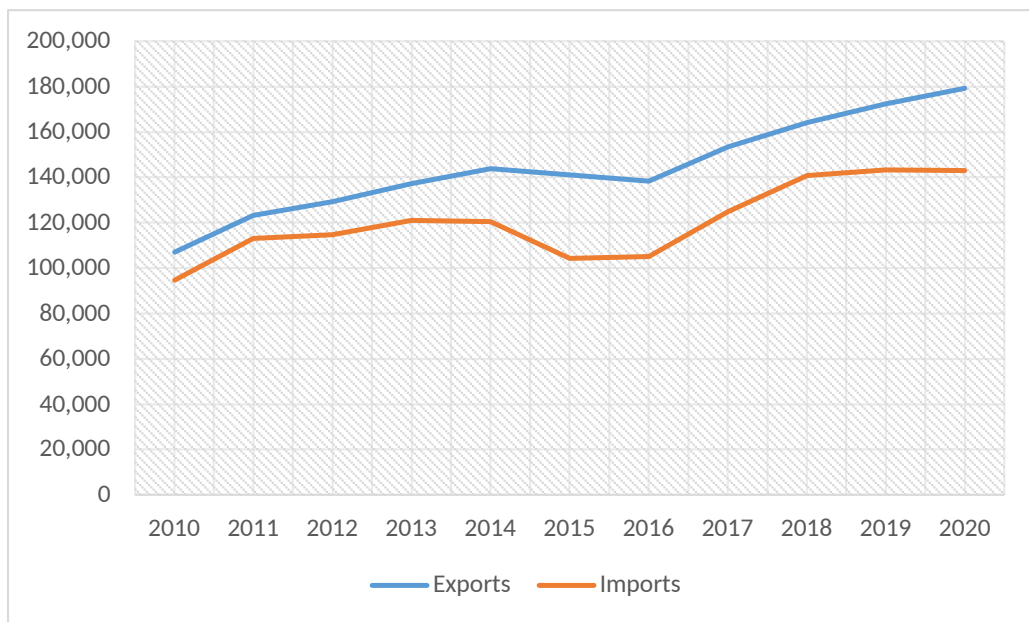
Source: ACI based on information retrieved from World Bank

Figure 1.4: China's GDP per Capita (RMB)

Source: ACI based on information retrieved from National Bureau of Statistics of China

Trade continues to play a significant role in China's economic growth. As at the 20th anniversary of China's accession to the WTO in November 2021, it has revised over 2000 laws, regulations, and policies to align itself with the WTO rules. The overall tariff level has also decreased from 15.3% to 7.4%, which is lower than that of all developing members and close to that of developed members in the organisation. China has further opened over 120 service sectors (Xinhua News Agency 2021)⁵. With these favourable policies, China's foreign trade demonstrated strong resilience in the face of COVID-19 disruptions and saw record volumes and steady improvement in quality. Foreign trade moved up another notch and exceeded RMB 39 trillion for the first time in 2021. It also achieved steady growth with its five largest trading partners, reaching RMB 5.67 trillion with ASEAN and 5.35 trillion with the EU. As shown in Figure 1.5, China's trade has increased steadily since 2016. Moreover, in 2020, as a leading country recovering from the pandemic, its trade surplus and trade openness exceeded RMB 3.5 trillion and 32% respectively.

Figure 1.5: China's Exports and Imports (RMB 100 Million)



Source: ACI based on information retrieved from National Bureau of Statistics of China

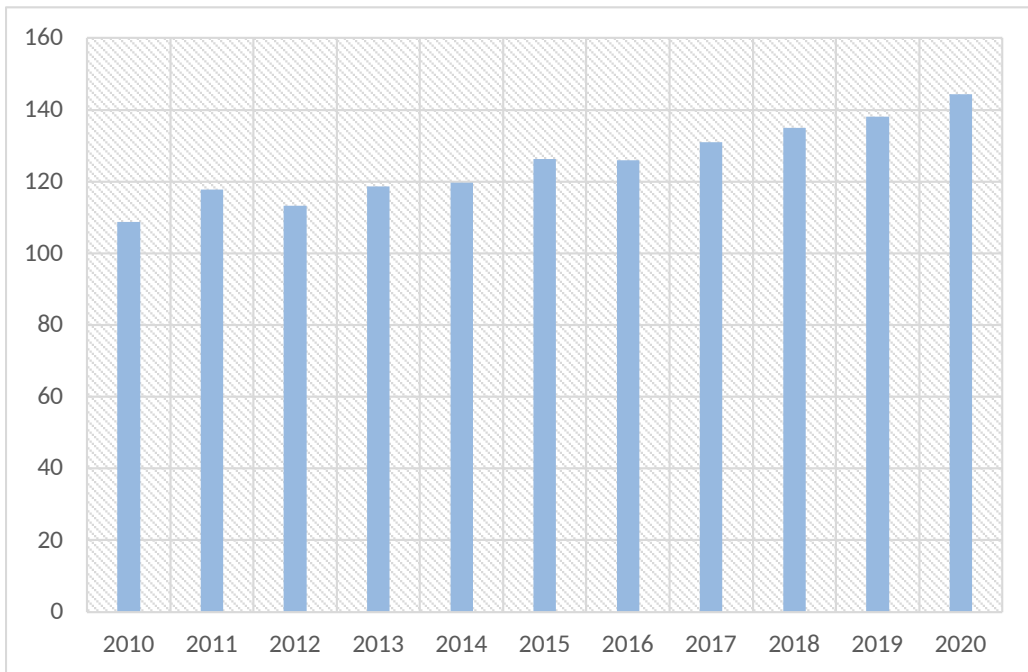
With its potential to provide technology spillovers, Foreign Direct Investment (FDI) is another key factor in China's economic growth. One of China's core development strategies of its Reform and Opening Up Policy is to stay open to the world. As a result of embracing foreign investment, registered FDI has been growing over the years. As shown in Figure 1.6, China's FDI exceeded USD 140,000 million in 2020 and China has become the second-largest destination of FDI in 2021. Moreover, the 2021 negative list for foreign investment has shrunk further. As such, China's FDI is likely to show a

⁵<http://www.gov.cn/xinwen/2021-10/28/content.5647459.htm> accessed on 14 Mar 2022

further upward trajectory in the future.

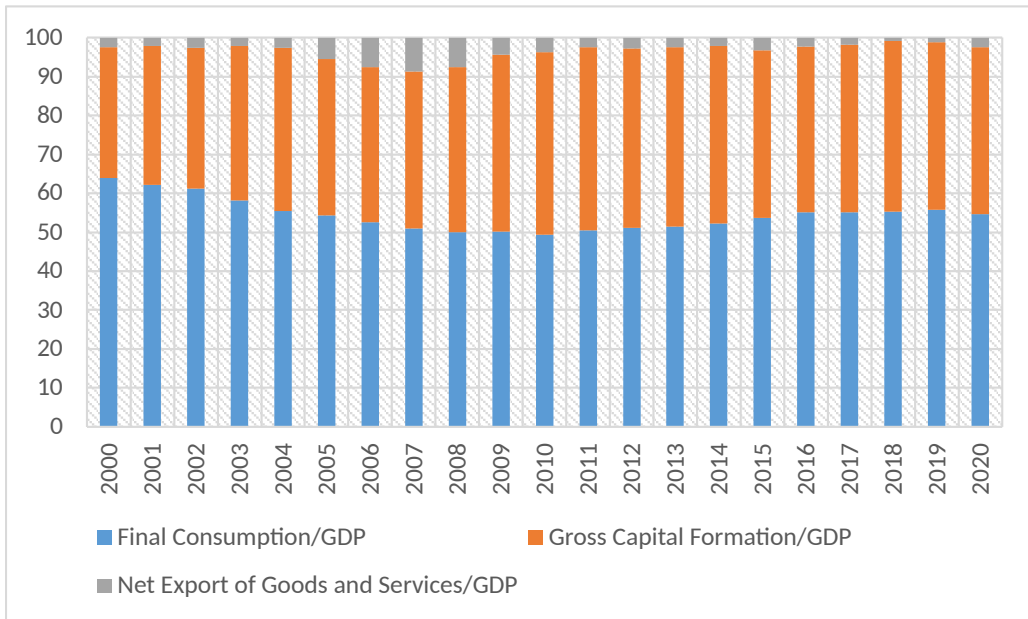
However, with the multiple waves of COVID-19 variants hitting the global economy, the foreign markets have shown signs of vulnerability. It would be risky for China to rely solely on international trade as the growth engine. In 2020, the central government announced the “dual circulation” strategy. It aims to prioritise the development of the domestic market, through boosting domestic demand, improving the innovation capability and reducing reliance on foreign markets. At the same time, China would continue to open up to external parties. The following trends would highlight the domestic market potential.

Figure 1.6: China’s Foreign Direct Investment (USD billions)

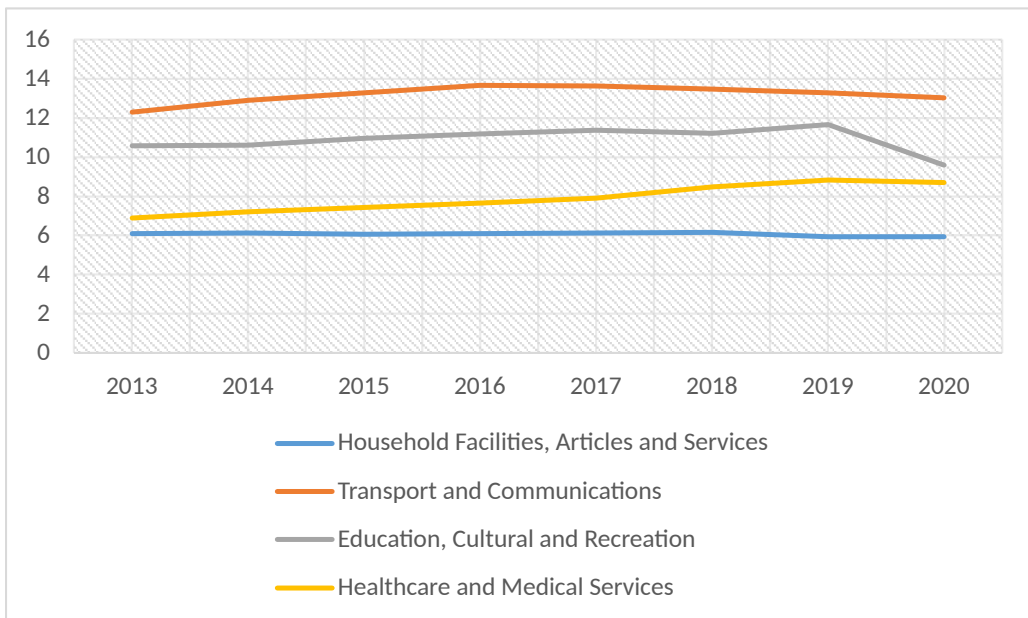


Source: ACI based on information retrieved from National Bureau of Statistics of China

Firstly, domestic consumption is likely to be the key driver of China’s economic growth. Consumption expenditure has been a dominant component of China’s GDP for 20 years. As shown in Figure 1.7, it has contributed to more than 50% of the GDP since 2011. In 2020, with the challenge of the COVID-19 pandemic, as households’ purchasing power decreased and consumption habits reshaped, the consumption expenditure growth rate was only about 1.5%, much lower than the 9.2% growth rate in 2019. However, more than 54.3% of China’s GDP growth continues to come from the growth in final consumption.

Figure 1.7: China's GDP Components by Expenditure Approach (Percentage of GDP)

Source: ACI based on information retrieved from National Bureau of Statistics of China

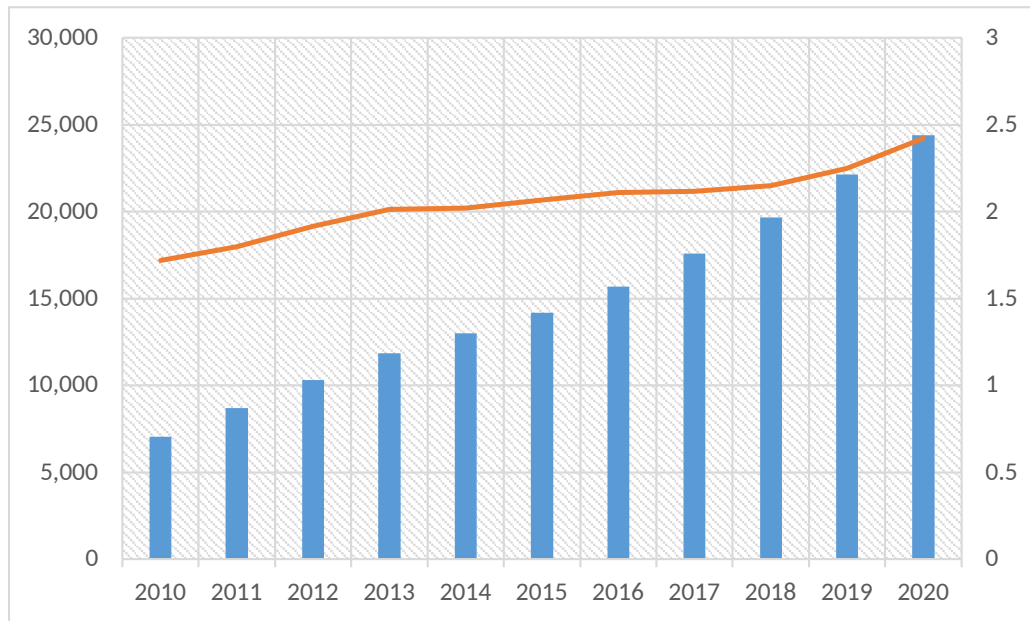
Figure 1.8: Percentage of Expenditure on Services Related Categories

Source: ACI based on information retrieved from National Bureau of Statistics of China

Secondly, the service sector has witnessed a sustained recovery. Figure 1.8 shows that expenditure trends on services-related categories have been flattened in 2020. We can also

observe a large drop in Education, Cultural and Recreation which may be related to the lockdowns in different cities. The number of domestic tourists in 2020 was 2.879 billion, 3.022 billion less than in the same period last year. In terms of tourism consumption, urban residents spent 1.80 trillion yuan on travel, a drop of 62.2% while rural residents spent 0.43 trillion yuan, a drop of 55.7%. The reduction in education expenditure could also be attributed to the China's education reform, which closed private tuition centers.

Figure 1.9: R&D Expenditure (Left, 100 Million Yuan) and R&D Expenditure/GDP (Right)



Source: ACI based on information retrieved from National Bureau of Statistics of China

Thirdly, R&D expenditure shows an upward trajectory. Owing to the steady recovery of the Chinese economy in 2020, China's R&D expenditure hit a new high of 2.42% of its gross domestic product in 2020 (Figure 1.9). With such an investment, China has witnessed major developments in synthetic biology, high-speed railways and basic software (People's Daily 2021)⁶. According to the Global Innovation Index, China has improved its ranking from 29th place in 2015 to 14th in 2020 (Dutta, Lanvin, and Wunsch-Vincent 2020). However, the R&D expenditure is still unbalanced. The expenditure on basic research is 15%-20% lower than that of developed countries. It is also heavily subsidised by the central government (Xinhua Net 2021)⁷. How to incentivise the local government and enterprises remains a challenge.

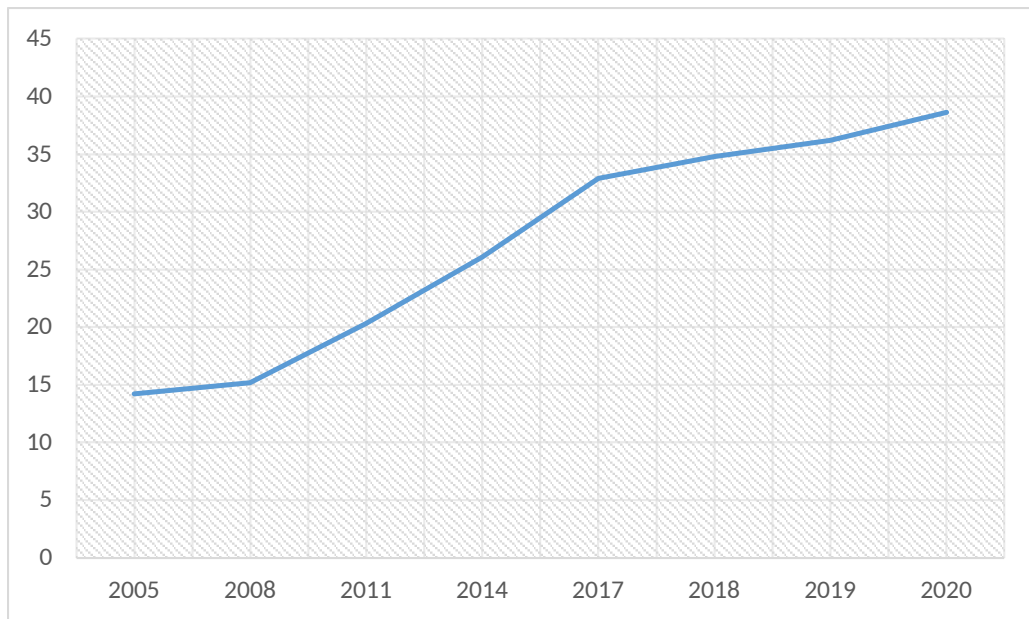
Last but not least, the development of China's digital economy surged from 2008 to 2017. As a key growth engine, it contributed 38.6% of the GDP (Figure 1.10) or RMB 39.2

⁶http://english.www.gov.cn/news/topnews/202112/05/content_WS61ac2999c6d0df57f98e60fa.html accessed on 14 Mar 2022

⁷<http://www.xinhuanet.com/techpro/2021-03/29/c.1127266266.htm> accessed on 14 Mar 2022

trillion in 2020. Today, China's digital economy ranks second in the world (China Daily 2022)⁸. By 2021, China had constructed more than 1.425 million 5G base and registered more than 355 million 5G mobile phone users. Moreover, the digital economy is of great importance in promoting the economic participation of rural areas, as well as in bridging the connection between urban and rural areas. In 2021, China is applying to join the Digital Economy Partnership Agreement to enhance international digital cooperation and digital regulation (Xi Jinping 2021 G20 Submit)⁹.

Figure 1.10: Digital Economy to GDP Ratio



Source: ACI based on information retrieved from China Academy of Information and Communications Technology (2021)

In summary, with higher expenditure in consumption and the rapid growth of the digital economy, China's domestic growth still possesses great potential. In 2021, China has filed to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) to strengthen international ties. The new development pattern of "dual circulation" will form a more efficient connection between the internal and external circulation and markets, ensuring stable, healthy and sustainable economic growth for China in the long run.

⁸http://english.www.gov.cn/news/topnews/202202/21/content_WS6212ffdfc6d09c94e48a5461.html accessed on 14 Mar 2022

⁹http://www.news.cn/politics/leaders/2021-10/30/c_1128013838.htm accessed on 14 Mar 2021

1.3 Motivation and Roadmap of the Book

This final section discusses the motivation of this project and outlines the roadmap of the book.

It is said that regional disparity is a natural outcome given vastly different population distribution, resource allocation and social conditions across China. Without a deep understanding of each region's strengths and weaknesses, policymakers can hardly tackle the problem of unequal development. However, the country's dazzling economic achievement often obscures the focus. In the spirit of calling people's attention to China's sub-national disparity and facilitating sustainable and inclusive growth, ACI has crafted a comprehensive methodology and framework to assess competitiveness at the sub-national level. The methodology is employed in this book and ACI's previous publications on Greater China, Indonesia, India, and ASEAN. Our work and publications make a distinctive contribution to the literature on economic development in the region by focusing on competitiveness analysis and rankings at the subnational level, beyond the traditional analysis at the national level.

Since the publication of ACI's inaugural volume on Greater China economies, ACI's comprehensive competitiveness index has been used to rank the 34 Greater China economies in various dimensions. As ACI aims to provide an annual update by extending all studies, this updated book thus includes data from 2000 to 2018, which was the latest available at the time of data collection in 2021.

This book consists of four chapters. Chapter 1, as we have seen, presents an introduction to China's economy in 2021. A dedicated investigation of the policies and macroeconomic trends has been provided in view of the substantial impact of the COVID-19 pandemic.

Chapter 2 elaborates on the research methodology deployed in this project, starting with the literature review on competitiveness, followed by the details of the research framework that underpins ACI's study of Greater China's competitiveness at a sub-national level. The provincial competitiveness rankings and scores for the overall index and the four environments are also presented in this chapter. This chapter also includes a dedicated case study of Guizhou, given the province's remarkable improvement in competitiveness ranking. Chapter 3 discusses the regional level analysis. Based on data from various indicators in 2018, Chapters 2 and 3 further includes the *What-if* Competitiveness Simulation analysis and Shapley Weight robustness check to deliver more insights into effective policy responses and how they facilitate competitiveness.

Chapter 4 presents an empirical study on differential development of the cities in the GBA in terms of FDI. A case study on Foshan explains the boom of FDI in retail sector.

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